

What Is Claimed Is:

1. A compositional buffer having the function of maintaining an electronic ceramic containing a volatile element, or a thin film thereof, at its stoichiometric composition by covering the surfaces of the fine crystal grains that make up said electronic ceramic or thin film thereof with the compositional buffer in the process of synthesizing said electronic ceramic or thin film thereof, wherein said compositional buffer is composed of a silicate- or borate-based compound that readily forms an amorphous structure.

2. The compositional buffer according to claim 1, wherein the electronic ceramic containing a volatile element or thin film thereof is composed of a bismuth-based laminar compound or lead-based perovskite compound containing highly volatile cations typified by bismuth or lead.

3. The compositional buffer according to claim 1, wherein an alkoxide of silicon or an alkoxide of boron is used as the silicate- or borate-based compound.

4. The compositional buffer according to claim 1, wherein the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin

film thereof are covered with a silicate- or borate-based compound that readily forms an amorphous structure by chemical solution method.

5. A method for manufacturing a compositional buffer that covered on the surfaces of the fine crystal grains that make up an electronic ceramic containing a volatile element or a thin film thereof,

comprising covering the surfaces of the fine crystal grains that make up the electronic ceramic or thin film thereof with a silicate-based compound or borate-based compound that readily forms an amorphous structure by chemical solution method.

6. A method for manufacturing an electronic ceramic containing a volatile element or a thin film thereof, in which the stoichiometric composition is controlled,

comprising covering the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin film thereof with the compositional buffer according to any one of claims 1 to 4 by chemical solution method.

7. The method according to claim 6, wherein the electronic ceramic containing a volatile element or thin film thereof is composed of a bismuth-based laminar compound or

lead-based perovskite compound containing highly volatile cations typified by bismuth or lead.

8. The method according to claim 6, wherein an alcohol solution of a metal organic acid salt or an organometallic compound is used as the raw material solution of the electronic ceramic or thin film thereof.

9. The method according to claim 6, wherein the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin film thereof are covered by evaporating to dryness a uniform mixed solution of the compositional buffer and the raw material solution of the electronic ceramic or thin film thereof.

10. The method according to claim 6, wherein the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin film thereof are covered by coating a substrate with a uniform mixed solution of the compositional buffer and the raw material solution of the electronic ceramic or thin film thereof, and then heating.

11. The method according to claim 6, wherein metallization at the grain boundary of the highly volatile cations typified by bismuth or lead is prevented by covering

the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin film thereof with the compositional buffer.

12. The method according to claim 6, wherein any highly volatile cations typified by bismuth or lead that have been added in excess are incorporated into the amorphous structure by covering the surfaces of the fine crystal grains that make up the electronic ceramic containing a volatile element or thin film thereof with the compositional buffer.